National Institute of Environmental Health Sciences

Effects of environmental change on zoonotic disease risk: An ecological primer

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Abstract:

Impacts of environmental changes on zoonotic disease risk are the subject of speculation, but lack a coherent framework for understanding environmental drivers of pathogen transmission from animal hosts to humans. We review how environmental factors affect the distributions of zoonotic agents and their transmission to humans, exploring the roles they play in zoonotic systems. We demonstrate the importance of capturing the distributional ecology of any species involved in pathogen transmission, defining the environmental conditions required, and the projection of that niche onto geography. We further review how environmental changes may alter the dispersal behaviour of populations of any component of zoonotic disease systems. Such changes can modify relative importance of different host species for pathogens, modifying contact rates with humans.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Ecosystem Changes

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Global or Unspecified

Health Impact:

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Zoonotic Disease

Zoonotic Disease: General Zoonotic Disease

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Resource Type:

format or standard characteristic of resource

Review

Timescale:

time period studied

Time Scale Unspecified